REMARKS

Applicant expresses appreciation to the Examiner for the examination of the subject patent application. Applicant also appreciates the courteous telephone interview the Examiner gave to Applicant's attorney on October 18, 2002. This amendment is in response to the Office Action mailed July 22, 2002 and pursuant to the above interview with the Examiner.

The specification was objected to because of missing serial numbers on pages 2, 14, and 16 for copending applications. The abstract was objected to as constituting two paragraphs. The specification and abstract have been amended to address the concerns raised by the Examiner.

Claims 1, 3, 4, 7, and 9 were objected to as having improper antecedents. Those claims, as well as claim 20 have been amended to eliminate improper antecedents.

Claims 1-27 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,611,319 (Gilbert). No amendments to the claims have been made, and claims 1-27 remain in the application.

Claim Rejections - 35 U.S.C. § 102

Claims 1-27 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,611,319 (Gilbert). Applicant respectfully transverses this rejection for the reasons stated below.

The Invention:

The invention is best characterized by independent method claim 24 which reads as follows:

A method for marking the content of an electrically addressable device used for recording, addressing and reading of data and having a storage array unit with multiple layers of data storage medium, each mounted on a substrate, comprising:

selecting at least one outermost layer of data storage medium as a display layer; and

electrically storing data on the outermost layer to provide a display indicating pre-selected information.

The emphasis in the specification and in the claims is on establishing a display layer in a data storage array or device, and then electrically storing data on the outermost layer of a data storage device to provide a display of information. As stated on page 3, beginning at line 19: "Typically, it is important to have the display provide the nature of the data being stored in the memory module. The display may include the title, date of creation, location, type of data, owner and other descriptive information associated with the stored content. The

display should also provide a display of the portion of the memory module that has been used, which can be depicted numerically, graphically or by other visual means. Preferably, the display information regarding the amount of memory used can be modified as the amount of stored data changes."

Again, on page 5, beginning at line 12: "the electrical marking device comprises at least one layer that is a display layer that is partially visually altered to provide a display of information, such as a display of the subject matter and name of the content of the data and the amount of memory storage that has been used." Also, with respect to the corresponding method, it is stated on page 6, beginning at line 9: "The method comprises storing data on an outermost layer representative of the content of the data to provide a display indicating the nature of the content of the data stored on the storage array unit. . . . . The display may indicate any pre-selected information, including but not limited to information about the subject matter and name of the content of the data, as well as the amount of the storage array unit that is recorded with data."

The electrical marking device, in one embodiment, may take the form of a write-once display, such as a fuse device, that "requires the dedication of an outer layer of the memory module as a marking layer for the purpose of providing pre-selected information of any kind, including information about the content of the data stored in the module." (Page 14, lines 21-24.) Figure 8 shows this embodiment of the invention, in which there is a high density of fuse elements for each pixel conveying information. Because of this arrangement, many shades of gray may be displayed, enabling the display of a variety of information on the display layer. Different shades of gray are shown in Figure 9, depending on the number of blown fuses. As stated on page 15, lines 26-31:

"The display is preferably used to present images or text that identify the stored content. The nature of this descriptive data displayed may include, but is not restricted to: date of creation, title, location, genre (video, still, audio, game and so forth), owner, or other descriptive meta-data associated with the stored content. A portion of the display may also be used to graphically represent the fraction of the memory that has been used, such as with a bar graph."

An alternative embodiment is called a passive capacity monitor. As stated, on page 16, beginning on line 14:

"This approach does not require the dedication of a layer of the memory module or the use of a reflector coating. Rather, the amount of memory used and the amount remaining can be determined from the appearance of the memory module itself. The substrate used to fabricate the memory layers is preferably made from a material that is relatively transparent.

In this embodiment, the rows and columns of each of the layers are laid out in the same order for addressing. The data words or bytes in the memory module are formed using one bit from each memory layer at the same row and column address."

The Prior Art:

All of the claims were rejected under 35 USC 102(b) as anticipated by US Patent No. 3,611,319 (Gilbert). Gilbert teaches an electrical alterable read-only memory having write once capabilities. Each memory element consists of a fuse and diode that can be written once by blowing the fuse. Gilbert makes no mention of a display layer, and particularly no mention of an electrical display device for the purpose of displaying information about the data stored in the storage array.

The specification of the present invention discloses the fuse-diode write-once circuitry as one embodiment of the specific invention. However, the invention is not directed to fuse-diode write-once technology per se. Rather, the invention is directed to using some data storage circuitry to provide a display regarding pre-selected information.

There does not appear to be any disclosure or discussion in the Gilbert patent that teaches the invention of the present invention. Accordingly, it is submitted that the Gilbert patent does not anticipate or render obvious the present invention as described and claimed.

Independent apparatus claims 1 and 18 both include language specifically related to "an electrical marking device on at least one of the layers of storage medium . . .to provide a display indicating pre-selected information." Again, Gilbert does not seem to anticipate or even teach this concept of using a marking device to create a display of information on the storage medium.

The remaining claims are all dependent on the above mentioned independent claims and provide more detail regarding the display characteristics of the invention. For example, method claim 25 includes the feature of a reflective coating on the interface of the display layer and the remaining layers. The specification indicates that this reflective coating enhances the display characteristics of the displayed information on the outer storage layer. Claim 26 indicates that the display provides information about the content of the data stored in the storage array unit. Claim 27 states that the display indicates the amount of the storage array that has been recorded with data. The other dependent claims address other such features regarding the display characteristics of the invention.

In view of the foregoing amendments and comments, the Examiner is respectfully requested to reconsider and withdraw the citation of the Gilbert patent as a reference against the claims.

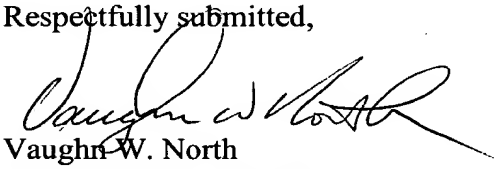
CONCLUSION

In light of the above, it is submitted that the pending claims 1-27 are now in condition for allowance. Therefore, Applicant requests that the rejections and objections be withdrawn, and that the claims be allowed and passed to issue. If any impediment to the allowance of these claims remains after entry of this Amendment, the Examiner is strongly encouraged to call the undersigned attorney, Vaughn North, at (801) 566-6633 so that such matters may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 08-2025.

DATED this 22 day of October, 2002.

Respectfully submitted,



Vaughn W. North
Registration No. 27,930

THORPE, NORTH & WESTERN, L.L.P.
P.O. Box 1219
Sandy, Utah 84091-1219
Telephone: (801) 566-6633

Version with Markings to Show Changes Made

In the Specification:

Beginning on page 3, line 1:

Another application in portable devices for providing high density archival storage is described in co-pending United States Patent Application serial number 09/875,356, filed June 5, 2001[_____ (HP Corporate docket number 10002367)], entitled "Write-Once Memory," the disclosure of which is hereby incorporated herein by reference. The memory system disclosed therein, referred to as portable inexpensive rugged memory (PIRM), aims to provide high capacity write-once memory at low cost for archival storage. This is realized in part by avoiding silicon substrates, minimizing process complexity and lowering areal density. The memory system includes a memory module formed of a laminated stack of integrated circuit layers constructed on plastic substrates. Each layer contains cross-point diode memory array, and sensing of the data stored in the array is carried out from a separate integrated circuit remotely from the memory module.

Beginning on page 5, line 12:

In one embodiment, the electrical marking device comprises at least one layer that is a display layer that is partially visually altered to provide a display of information, such as a display of the subject matter and name of the content of the data and the amount of memory storage that has been used.

Beginning on page 14, line 3:

Fabrication of the PIRM memory module described herein is preferably done in accordance with the methods of fabrication provided in co-pending United States Patent Application serial number 09/875,572, filed on June 5, 2001, [_____, (HP corporate docket number 10002972)] entitled "Fabrication Techniques for Addressing Cross-Point Diode Memory Arrays," the disclosure of which is hereby incorporated herein by reference.

Beginning on page 16, line 1:

The display memory is addressed, written, and read in the same fashion as the other memory layers. Preferred methods for addressing, reading and writing to the memory module are given in co-pending United States Patent Application serial number 09/875,496, filed June 5, 2001,[_____, (HP corporate docket number 10002595)]

entitled "Addressing and Sensing a Cross-Point Diode Memory Array," and co-pending United States Patent Application serial number 09/875,828, filed June 5, 2001, now U.S. Patent No. 6,385,075, granted May 7, 2002,[, (HP corporate docket number 10002971)]entitled "Parallel Access of Cross-Point Diode Memory Arrays," the disclosures of which are hereby incorporated herein by reference.

The Abstract on page 22, as follows:

ABSTRACT OF THE DISCLOSURE

[An electrically addressable device for recording, addressing and reading of data, includes a storage array unit having multiple layers of data storage medium.] An electrical marking device is disposed on at least one layer of a data storage array having multiple [the] layers of storage medium. [of the storage array unit to provide a display indicating any pre-selected information, such as the nature of the content of the data stored on the storage array unit.] The [electrical] marking device comprises [may comprise] at least one [layer functioning as a] display layer that may be [is partially] visually altered to [provide a] display [of] information, such as the nature, [to display the] subject matter and [name of the] content of the data and [the] amount of memory storage [that has been] used. The display layer comprises a plurality of data [information] storage cells, [each representing the value of at least one data bit,] wherein the visual appearance of each of the data [information] storage cells [cell] is varied depending on the value of the data bit. A method is also provided for electrically

[The invention also includes a method for] marking the content of an electrical data storage [electrically addressable] device [used for recording, addressing and reading data and] having a storage array unit with multiple layers of data storage medium. Data is stored [The method comprises storing data] on an outermost layer of the data storage array to electrically [representative of the content of the data to] provide a visual display indicating [pre-selected] information about the stored data.[, such as the nature of the content of the data stored on the storage array unit.]

In the Claims:

1. (amended) An electrically addressable device for recording, addressing and reading of data, comprising:

a storage array unit having multiple layers of data storage medium, each of said layers being mounted on a substrate; and

an electrical marking device associated with [said] at least one of the layers of storage medium of the storage array unit to provide a display indicating pre-selected information.

3. (amended) The electrically addressable device as recited in claim 2, wherein the display layer further comprises a plurality of multiple-state information storage cells each representing a [the] value of at least one data bit, wherein the visual appearance of each information storage cell varies depending on the state of the information storage cell.

4. (amended) The electrically addressable device as recited in claim 1, wherein the information storage cells each further comprises a multiple state electrical device which changes states depending on a [the] value of the data bit and having variable visual appearance depending on the state of the electrical device.

7. (amended) The electrically addressable device as recited in claim 2, wherein the display layer comprises an [one of the] outermost layer [layers] of the storage array unit.

9. (amended) The electrically addressable device as recited in claim 7, and further comprising a reflective layer between the display layer and a [the] next layer in the storage array unit.

20. (amended) The electrically addressable device as recited in claim 18, wherein the display indicates information about the nature of the content of [the] data stored on the storage array unit.

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